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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,094	07/22/2003	Su-Hyung Kim	5000-1-428	8779
33942	7590	08/16/2006	EXAMINER	
CHA & REITER, LLC 210 ROUTE 4 EAST STE 103 PARAMUS, NJ 07652			AZEMAR, GUERSSY	
			ART UNIT	PAPER NUMBER
			2613	

DATE MAILED: 08/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/625,094

Applicant(s)

KIM ET AL.

Examiner

Guerssy Azemar

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/27/2003 6/22/2003 Cn A.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/27/05:04/03/06.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 8 is objected to because of the following informalities: "to re-adapted the first input terminal." After the preposition comes the verb's infinitive. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Kawate et al. (20020030865).

(1) with respect to claim 1:

As shown in figure 1, Kawate et al. discloses a redundant apparatus for a GE-PON system which includes an OLT, a splitter connected to the OLT via a working path line composed of only one optical fiber, and a plurality of ONU's connected to the splitter via individual optical fibers, said apparatus comprising (page 1, paragraph 2):

said working path line (first optical fiber in figure 1) located between the OLT and the splitter to perform two-way communication (figure 1, and 2, there are both TX/RX section at each end of a line);

a redundant path line (second optical fiber in figure 1), which is composed of only one optical fiber, located between the OLT and the splitter to perform two-way communication (figure 1, and 2, figure shows a redundant second optical fiber, and figure 2 shows a TX/RX at end of a line).

ONU means (52-1, figure 1) for detecting a transmission loss of the working path line upon receiving a signal transmitted from the OLT (51 in figure 1) to one ONU among the ONUs, and for transmitting switching information of the working path line via the working path line (T5 in figure 5).

and an OLT for receiving the switching information via the working path line, and for transmitting data to the ONU means via the redundant path line according to the received switching information (T12 in figure 5, page 5, paragraphs 96 – 99).

(2) with respect to claim 2:

Kawate et al. discloses the apparatus, wherein said working and redundant path lines are disposed in a 1+1 configuration (page 8, paragraph 155).

(3) with respect to claim 15:

Kawate et al. discloses an OAM frame for a GE-PON system having two path lines located between a splitter and an OLT (Optical Line Terminal) in which only one path line is in a connection state to serve as a working path line, and the other on path line is in a no-connection state to serve as a protection path line, said OAM frame comprising (first optical fiber, second optical fiber in figure 1, page 4, paragraph 83):

data field having information generated by an ONU to request a switching operation between the working path line and the protection path line (T1 in figure 1, page 3, paragraph 43).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 4, 5, 7 – 9, 13, 16 - 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawate et al. (US 20020030865) in view of Xu et al. (US 20020071149).

(1) with respect to claim 3:

Kawate et al teaches all of the subject matter as described in above except for the apparatus, wherein the splitter is a 2xN splitter.

Xu et al. teaches the apparatus, wherein the splitter is a 2xN splitter (303 in figure 3A, page 2, paragraph 27).

It is always desirable to obtain cost effective fault protection method and architecture for PON. Xu et al. offers a very reliable PON interface. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the splitters as taught by Xu et al. in the PON of Kawate et al. because, in doing so, the network would have been cheaper.

(2) with respect to claim 4:

Kawate et al. teaches an apparatus comprising:

an OLT being connected to the 2xN splitter via a first path line or a second path line, and including a switching unit for switching the first path line or the second path line upon receiving a predetermined control signal; and (page 2, paragraph 23)

an ONU for creating a switching request according to a signal environment, and transmitting the generated switching request to the OLT (T1 in figure 1, page 3, paragraph 43, 50, page 5, paragraph 96)

However, Kawate et al. does not teach a 2xN splitter.

Xu et al. teaches a 2xN splitter (303 in figure 3A, page 2, paragraph 27).

It is always desirable to obtain cost effective fault protection method and architecture for PON. Xu et al. offers a very reliable PON interface. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the splitters as taught by Xu et al. in the PON of Kawate et al. because, in doing so, the network would have been cheaper.

(3) with respect to claim 5:

Kawate et al. teaches the apparatus, wherein the apparatus comprises a passive optical network (page 1, paragraph 2).

(4) with respect to claim 7:

Kawate et al. teaches the apparatus, wherein either one of the first path line and the second path line of the splitter is connected to the OLT and is adapted as a working path line, and the other one is not connected to the OLT and is adapted as a protection path line (first optical fiber and second optical fiber in figure 1, Kawate does not explicitly

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teach a first path line being connected and a second not being connected, but does talk about disabling the output of the standby side, which the examiner interprets as “not being connected”).

Xu et al. teaches a 2xN splitter (303 in figure 3A, page 2, paragraph 27).

It is always desirable to obtain cost effective fault protection method and architecture for PON. Xu et al. offers a very reliable PON interface. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the splitters as taught by Xu et al. in the PON of Kawate et al. because, in doing so, the network would have been cheaper.

(5) with respect to claim 8:

Kawate et al. teaches the apparatus, wherein the splitter has a first input terminal and a second input terminal (it is clear that adding a redundant element to figure 24, would result in a first and a second input terminal), and wherein the switching unit of the OLT disconnects the OLT from the splitter in switching the first input terminal to re-adapt the first input terminal from the working path line to the protection path line, or connects the OLT to the splitter n switching the second input terminal to re-adapt the second input terminal from the protection path line to the working path line (see 51 in figure 2, block 73, the selection controller disables the output as mentioned in page 10, paragraph 192).

(6) with respect to claim 9:

Kawate et al. teaches the apparatus, wherein the switching unit of the OLT disconnects the OLT from the splitter in switching the second path line having been

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adapted as the working path line to the protection path line, or connect the OLT to the splitter in switching to the first path line to working path line (see 51 in figure 2, block 73, the selection controller disables the output as mentioned in page 10, paragraph 192).

(7) with respect to claim 13:

Kawate et al. teaches the apparatus, wherein said creating occurs in response to at least one of a signal degradation, a signal failure, and a power margin (SD "signal degrade", SF "signal fail" in figure 4, page 6, paragraph 114).

(8) with respect to claim 16:

Kawate et al. teaches the OAM frame further comprising a flag field having an N-th bit that is adapted to perform an alarm function, wherein the N-th bit indicates the existence of a predetermined condition for requesting the switching operation (Kawate et al. does not explicitly teach an n-th bit, but does teach the detection of a "SD" or "SF". It is inherent that they are represented by a bit to alarm the system of the current system status; see figure 4, page 5, paragraph 98).

(9) with respect to claim 17:

Kawate et al. teaches the OAM frame, further comprising an operation code for event notification, the OP code including a predetermined value indicating asynchronous information (page 5, paragraph 99, K1, K2 are messages sent as to which action to be taken, therefore considered operation code).

(10) with respect to claim 18:

Kawate et al. teaches a method for controlling an apparatus including:

an OLT being connected to the splitter via a first path line or a second path line and having a switching unit for switching the first path line or the second path line upon receiving a predetermined control signal (see figure 1, page 2, paragraph 23); and

an ONU, said method comprising the steps of:

a) by means of the ONU, checking a signal environment (see figure 5, and 6, "the failure happens in the ONU, once detected by the ONU, it sends a request to OLT).

b) by means of the ONU, to generating a switching request according to the checked result and transmitting a packet containing the switching request to the OLT (page 7, paragraph 130 "k1 and k2 contains the request");

c) by means of the OLT, receiving the packet and detecting the switching request; and (page 3, paragraph 43)

d) by means of the OLT and upon receiving the switching request, switching a current working path line to a protection path line and switching a current protection path line to the working path line (page 3, paragraph 50).

However, Kawate et al. does not teach a 2xN splitter.

Xu et al. teaches a 2xN splitter (303 in figure 3A, page 2, paragraph 27).

It is always desirable to obtain cost effective fault protection method and architecture for PON. Xu et al. offers a very reliable PON interface. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the splitters as taught by Xu et al. in the PON of Kawate et al. because, in doing so, the network would have been cheaper.

(11) with respect to claim 19:

Kawate et al. teaches the apparatus, wherein the apparatus comprises a passive optical network (page 1, paragraph 2).

6. Claims 6, 11, 12, 14, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawate et al. (US 20020030865) and Xu et al. (US 20020071149) as applied to claims 4 and 18 above, and further in view of Graves et al. (20020191250).

(1) with respect to claims 6, 11, 12, 14, and 20:

Kawate et al. and Xu et al. teach all of the subject matter as described above, except for the method and apparatus comprising a GE-PON.

Graves et al. teaches a GE-PON (page 11, paragraph 0109).

It is desirable to have a system that impacts cost and efficiency. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the GE-PON as taught by Graves et al. in the network of Kawate et al. and Xu et al. because it would make it more reliable and cheaper.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guerssy Azemar whose telephone number is (571)270-1076. The examiner can normally be reached on Mon-Fri (every other Fridays off).

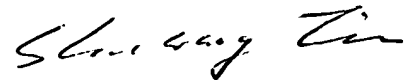
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Liu Shuwang can be reached on (571)272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Guerssy Azemar

07/25/2006



SHUWANG LIU
SUPERVISORY PATENT EXAMINER